Power – Batteries (continued)

Stills camera, memory back-up etc batteries

Li-ion and other special batteries for stills cameras, camcorder memory back up, electronic organisers etc. *Please refer to your camcorder/camera manual to determine correct battery*

Description	Order code	Price for 1	Price for 2	Price for 10
CR1620 3V Lithium, Used in some Psion organisers as well as camcorders for memory back up	[CR1620]	£1.75	£3.25	£14.00
CR2025 3V lithium, memory back-up for most Sony camcorders and some electronic organisers	[CR2025]	£1.50	£2.75	£12.00
CR2016 3V lithium, memory back-up for most Panasonic camcorders	[CR2016]	£1.50	£2.75	£12.00
CR2032 3V lithium, memory back-up for most other camcorders	[CR2032]	£1.50	£2.75	£12.00
CR123A 3V lithium, Used in Pentax and Olympus zoom cameras and some compacts	[CR123A]	£2.75	£5.25	£22.00
CR2 3V lithium, for newer Contax and Ricoh still cameras	[CR2]	£3.00	£5.75	£24.00
2CR5 6V lithium, used in many SLR cameras including autofocus Canon and Minolta	[2CR5]	£3.50	£6.75	£28.00
CR2P 6V lithium, used in Nikon F601 and many compact cameras	[2CRP2P]	£3.75	£7.25	£30.00
SR44 1.5V Silver oxide, used as memory back up in some camcorders, and also for metering in manual focus SLRs (usually two required)	[SR44]	£1.99	£3.50	£12.50
4SR44 6V Silver oxide, used as metering battery in Canon manual focus SLRs and Bronica medium format	[4SR44]	£2.75	£5.25	£22.00
LR1130 1.5V Alkaline, memory back up for some camcorders	[LR1130]	£1.50	£2.75	£12.00
CR-V3 3V 3300mAh photo lithium battery	[CRV3]	£8.99	£15.00	£70.00

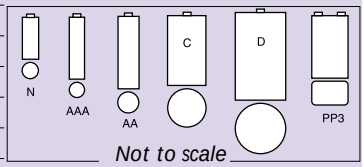
Rechargeable CR-V3 battery complete with worldwide charger (pictured left) [CRV3L] £29.99

Common equivalent identification codes for lithium and silver oxide batteries

6V lithium	2CR5	DL245		
6V lithium	CR-PTP	DE233A		
3V lithium	CR123A	DL123A		
1.5V silver oxide button	SR44	357	G13	KS76
6V silver oxide	PX28	544	4SR44	KS28

Commonly used 'conventional' battery numbers and equivalents

N	R1	LR1	MN9100	–	810	–
AAA	RO3	LR03	MN2400	UM4	824	HP16
AA	R6	LR6	MN1500	UM3	815	HP7
C	R14	LR14	MN1400	UM2	814	HP11
D	R20	LR20	MN1300	UM1	813	HP2
PP3	6F22	6LR61	MN1604	0068	A1604	PP3
PP9	–	–	–	–	–	–
3R12	–	–	MN1203	–	–	1289
4R25	–	–	–	–	–	PJ996
4R25-2	–	–	–	–	–	991



Car alarm remote batteries

GP23A (K23A)

12V Alkaline used in most car alarm remotes and some lighters.

[GP23A] £1.50 each, 2 for £2.75, 10 for £12

GP27A (K27A)

Newer type car alarms etc

[GP27A] £3.25 each, 2 for £6.25, 10 for £26

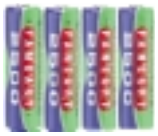
Conventional batteries (disposable)

Alkaline long-life batteries

AAAA single	[ALKAAAA]	£1.75
AAA Pack of 4	[ALKAAA]	£2.75
AA Pack of 4	[ALKAA]	£2.25
C Pack of 2	[ALKC]	£2.75
D Pack of 2	[ALKD]	£2.75
PP3 9V, each	[ALKPP3]	£2.25

Conventional batteries (NiCd & NiMH rechargeable)

Size	Capacity (mAh)	Quantity per pack	Order code	Price per pack
NiCd				
C	1600	2	[NCDC]	£3.25
PP3	150	1	[NCDPP3]	£5.25
NiMH				
AAA	800	4	[NMHAAA8]	£6.99
AA	2300	4	NMHAA23	£6.99
C	2200	2	[NMHC]	£6.75
D	2200	2	[NMHD]	£6.75
PP3	150	1	[NMHPP3]	£5.25



NEW! Super high (2500mAh) capacity NiMH AA batteries ideal for digital still cameras and countless other applications. Supplied in packs of four.

per pack [NMHAA25] £9.99

Two packs £18.00

CHARGERS for rechargeable batteries see pages 12

Hobby/Model power packs

7.2V 1800mAh NiCd

[RP14 £12.75

7.2V 1800mAh NiCd Sanyo cells

[RP18] £21.00

Chargers for these power packs see page 13

Holders for 4 cells

Plastic holders for 4 x AA, C or D cells.

AA [HOLDAA]	£0.99
C [HOLDC]	£0.99
D [HOLDD]	£0.99

New products, bargains and the most up-to-date prices all on our web site **www.keene.co.uk**

Chargers and dischargers for camcorder and digital stills camera batteries

Battery charging (NiCd and NiMH batteries)

While fast chargers (like that supplied with your camcorder) are most convenient, slow charging is more beneficial. Repeated fast charging of Nicads tends to reduce the capacity of the battery pack. Keeping capacity at a maximum is helped by a slow charge/discharge of the pack at regular intervals. For batteries that seem to have reduced capacity, a series of slow charge/discharge cycles will often restore the pack to its original capacity.

Hahnel TV101 universal charger/discharger

Fits 4.8V Panasonic as well as 6V Sony, Canon, JVC, Panasonic and Hitachi batteries

Suitable for both Nicad and Nickel Metal Hydride batteries. Can be car or mains powered (leads and adaptor included).

[TV101] £34.99

Energizer uni-charge Uno

Universal camcorder & digital camera charger for Li-ion, NiCd & NiMH batteries

Hi-tech design allows safe charging of Nickel Cadmium (Ni-Cd), Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-Ion), and Sealed Lead Acid (SLA) batteries. Reconditions (discharges) and automatically recharges Ni-Cd batteries to eliminate memory effect. Charges anywhere from AC current at home or through DC car cigarette lighter. Negative Delta V charge mode for Ni-Cd and Ni-MH batteries, constant current and constant voltage charge mode, for Li-Ion and SLA batteries. Intelligent microprocessor universal circuitry to charge 3.6V to 12V batteries with built in short circuit protection & timer control for extra safety. Straight out of the box this will charge the following batteries:

Canon 6v BPE77/711/714/720/726/CA77/CA77H (NP37 type)
Hitachi 6v VMBP82/83/84/HB82H (NP83 type)
JVC BNV11U/12/18U/20/22/NVS1/S2 (NP17 type)
Panasonic VWVBS1E/NVS1 (NP17 type)
Sharp 6v BT80/BT77 (NP55 type)
Sony NP55/66/77/78/98 (NP55 type)

To charge other battery models, adaptor plate required – see list (right)

[EUCU] £39.99

Energizer uni-charge duo

A two-up version of the uni-charge uno – each bank is fully independent and so the unit may be used to charge two batteries simultaneously.

'Out of the box' battery compatibility and adaptor plate (for other batteries) availability same as uni-charge uno

[EUCD] £49.99

Energizer digi-charger

Universal charger for camcorder & digital camera Li-ion (only) batteries. Operates from car or mains (car cigar power cord and UK mains adaptor supplied). Processor controlled constant voltage charge mode with short circuit and over-voltage protection. Straight from the box it will charge:

Canon BP80/BP85
Hitachi VMBPL13/27/30/60
JVC BNV812U/814U
Panasonic VWVBD1E/CGRB202E
Sony NPF330/530/550/750/950 (L series)
Sony NPFM30/50/70/90/QM90 (M & QM series)
Sony NPFF50/70 (F series)

To charge other battery models, adaptor plate required – see list (right)

[EDC] £29.99

DIGITAL STILL BATTERY/CHARGER COMBO PACKS

Contains a worldwide plug-in mains travel charger plus a spare battery. The charger is very compact (approx 100 x 62 x 40mm) with a drop-in battery compartment and can completely recharge a 650mAh battery in about 70 minutes.

Charger plus NP80X battery (3.7V 1300mAh) for Fuji NP80 types

[DCL80] £49.99

Charger plus EL1X battery (7.4V 650mAh) for Nikon EN-EL1 types

[DCLEL1] £59.99

Charger plus BP511X battery (7.4V 1200mAh) for Canon BP511 types

[DCL511] £59.99

DCL80

DCLEL1

DCL511

Charger plus NB2L type battery (7.4V 600mAh) for Canon

[DCL2] £54.99

Charger plus NP60X battery (3.7V 900mAh) for Fuji

[DCL60] £49.99

Charger plus NB1L battery (3.7V 680mAh) for Canon NB-1L types

[DCL1] £49.99

Battery adaptor plates for Energiser uni-chargers & digi-charger

If your camcorder/digital stills camera battery will not fit the Energiser uni-chargers or digi-charger 'out of the box', don't worry, there's probably an adaptor plate available to interface your battery and the charger. Listed below is the range of adaptor plates available at December 2003. More will be added during the life of this catalogue so please check www.keene.co.uk or call us if you can't find your battery listed.

For			Battery identifier	Order code
Canon	3.6V	Li-ion	BT-L1,2,11,12	ENAPO8
Canon	3.7V	Li-ion	NB-1L	ENAP09
Canon	6V	Ni-MH	CA54,NB-5H	ENAP18*
Canon			BP80/85	ENAP26
Canon	7.2V	Li-ion	BP-406,412,422	ENAPO6
Canon	7.2V	Li-ion	BP-608/617	ENAPO3
Canon	7.2V	Li-ion	BP-80,85	ENAPO1
Canon	7.2V	Li-ion	BP-911/914/915/924/927/930/941/945	ENAPO3
Canon	7.4V	Li-ion	BP-511/512/522/535	ENAPO2
Canon	7.4V	Li-ion	NB-2L,CA2L	ENAPO2
Canon	7.4V	Li-ion	BP2L12	ENAP08
Casio	3.7V	Li-ion	NP-20,CS20	ENAP10
Fuji	3.7V	Li-ion	NP40,60,80,100,120	ENAPO7
Hitachi			VMPBL13/27	ENAP26
Hitachi	7.2V	Li-ion	DZ-BP16/28	ENAPO3
Hitachi	7.2V	Li-ion	VM-BPL13A,27,30,60	ENAPO1
Hitachi	9.6/10V	Ni-Cd/SLA	VM-BP63,65,BP-96,RHB66	ENAP19*
HP	7.4V	Li-ion	A920	ENAP12
JVC	3.6V	Li-ion	BN-V712,714	ENAPO7
JVC	3.7V	Li-ion	BN-V37,J37	ENAP15
JVC			BNV812U	ENAP26
JVC	7.2V	Li-ion	BN-V107,114	ENAPO4
JVC	7.2V	Li-ion	BNV-207,214	ENAPO5
JVC	7.2V	Li-ion	BNV-306,312	ENAPO4
JVC	7.2V	Li-ion	BNV-408,416,428	ENAPO4
JVC	7.2V	Li-ion	BNV-507,514	ENAPO5
JVC	7.2V	Li-ion	BNV-907	ENAPO5
JVC	7.2V	Li-ion	BNV607,615	ENAPO1
JVC	7.2V	Li-ion	BNV812,814	ENAPO1
JVC	9.6V	Ni-Cd/Ni-MH	BN-V3,5,7,8,JB962,JB962H	ENAP19*
Kodak	3.6V	Li-ion	KLIV-3000,5000	ENAPO7
Konica	3.6V	Li-ion	DR-LB1	ENAP17
Konica	3.7V	Li-ion	DRLB4	ENAP10
Kyocera	3.6V	Li-ion	BP800S,900S,1000S	ENAP17
Kyocera	3.6/7V	Li-ion	B780S	ENAP24
	3.6V	Li-ion	CR3V rechargeable	ENAP30
Minolta	3.7V	Li-ion	NP200,MNP200	ENAP10
Nikon	3.7V	Li-ion	EN-EL2	ENAP09
Nikon	3.7V	Li-ion	EN-EL5	ENAP29
Nikon	7.2V	Li-ion	EN-EL3	ENAP13
Nikon	7.4V	Li-ion	EN-EL1	ENAPO2
Olympus	3.7V	Li-ion	Li-10B,OL10	ENAP09
Panasonic	12V	SLA	BP50,80,88,VB30H,VBF2	ENAP21*
Panasonic	3.6V	Li-ion	CGA-S101,DMW-BC7	ENAP10
Panasonic	3.6/7V	Li-ion	CGAF001E, CGAF003	ENAP24
Panasonic	4.8V	Ni-Cd/Ni-MH	VW-VBS10,10H,20,20H	ENAP20*
Panasonic			VWVBD1, PVBT5	ENAP26
Panasonic	7.2V	Li-ion	CGR-D120/220/320/S602/PV-BP8A	ENAPO3
Panasonic	7.2V	Li-ion	CGADU07/14/21	ENAPO3
Panasonic	7.2V	Li-ion	CGR-V610,620	ENAP14
Panasonic	7.2V	Li-ion	VW-VBD1,CGRB202E	ENAPO1
Panasonic	7.2V	Li-ion	CGAS200E	ENAP29
Pentax	3.7V	Li-ion	D-Li2	ENAPO7
Pentax	7.4V	Li-ion	D-Li1	ENAP12
Ricoh	3.6V	Li-ion	DB-20,30,40	ENAPO7
Samsung	7.2V	Li-ion	SB-L110/220	ENAPO3
Samsung	7.2V	Li-ion	SB-L160/320/480	ENAPO3
Sanyo	7.2V	Li-ion	UR121	ENAP11
Sharp	3.6V	Li-ion	AD-T51BT	ENAP17
Sharp	3.6V	Li-ion	BT-L31	ENAP16
Sharp	3.6V	Ni-Cd/Ni-MH	BT-N1,11,21,22,32	ENAP22*
Sharp	7.2V	Li-ion	BL241,441	ENAPO6
Sharp	7.2V	Li-ion	BT-L43	ENAPO6
Sharp	7.4V	Li-ion	BT-L225	ENAPO6
Sharp	7.4V	Li-ion	BTL226	ENAP27
Sony	3.6V	Li-ion	NP-F10,20,30,SSF11,21,31	ENAPO8
Sony	3.6V	Li-ion	NP-FC10,11	ENAPO8
Sony	3.6/7V	Li-ion	NPFT1, NPFR1	ENAP24
Sony	6V	Ni-Cd/Ni-MH	NP22,NP22H	ENAP23*
Sony			L, M and P series	ENAP26
Sony	7.2V	Li-ion	NP-F100,200,300	ENAPO1
Sony	7.2V	Li-ion	NP-F330,530,550,750,950, L SERIES	ENAPO1
Sony	7.2V	Li-ion	NP-FF50,70,F SERIES	ENAPO1
Sony	7.2V	Li-ion	NP-FM30,50,70,90,QM50, M SERIES	ENAPO1
Toshiba	3.6V	Li-ion	NP100,PDR-BT1,2,1A,2A,3	ENAPO7
	2 or 4 AAA or AA rechargeable cells			ENAP25

*For uni-chargers only. Not suitable for use with digi-charger

All models Energiser adaptor plates £5.99

Chargers & dischargers (continued)

Hahnel MCL103 lithium-ion fast charger

A neat compact charger that can be powered from car or mains (UK mains adaptor and cigar lead supplied). Special Hahnel circuitry allows for a rapid charge rate (1000mAh capacity recharge from flat in approx 1 hr). One model fits each "family" of batteries eg the Panasonic model will do all Panasonic Lithium types.

Canon. Plate supplied as standard to fit BP406, BP412,BP422,BP914/5/6,BP924/7,BP945,BP508, BP511,BP522, (BP608 & BP617 adaptor plates available on request)

[MCL103C]	£49.99
Fuji [MCL103F]	£49.99
Sony* [MCL103S]	£49.99
Panasonic [MCL103P]	£49.99
JVC** [MCL103J]	£49.99
Samsung [MCL103SA]	£49.99

*Please let us know if you require a plate for the Sony 'S' series NPFS11/21/22 type battery.

**Please let us know if you require a plate for the BNV37 type battery.

Chargers for DSM belts/packs

Chargers/AC adaptors for DSMLOK 14.4V Li-ion batteries

Chargers only, or the charger/AC adaptors can power a camera at the same time as charging the battery.

Single charger (for 14.4V DSMLOK Li-ion)	[LCA1]	£149.99
Twin charger (for 14.4V DSMLOK Li-ion)	[LCA2]	£229.99
Single charger/AC adaptor (for 14.4V DSMLOK Li-ion)	[LCAC1]	£349.99
Twin charger/AC adaptor (for 14.4V DSMLOK Li-ion)	[LCAC2]	£399.99

Chargers for DSM 13.2V NP1+1SS batteries

Mini plug top single charger (for 13.2V NP1+1SS NiCd)	[11C180]	£39.99
Mini plug top twin charger (for 13.2V NP1+1SS NiCd)	[11C180T]	£49.99

110V charger for DSM battery belts

Please state model of belt for which required when ordering eg

[BELT CODE +110V]	£24.99

Faster delivery options available (at extra cost)

Dischargers - what do they do and why do I need one?

(This relates to NiCd & NiMH packs only)

In an ideal world, you charge the battery using the fast charger supplied with the camcorder, use it until the camcorder's battery indicator comes on, remove, store until next required, charge and so on. Such a sequence will give reasonable battery life, but in practice it can be very hard to follow. There's always a time when not all the battery's charge has been used, and you return with part- or even fully charged batteries. These need discharging before storage. A partly used battery should never be recharged, as this can lead to a condition known as nicad 'memory effect' where only part of the battery's capacity can be used.

This creates a need to periodically discharge your batteries, but this is not as simple as might first appear. Due to the chemistry of the cells, no cell should be discharged below a critical voltage otherwise permanent chemical change, and damage to the battery, can occur. Keene Electronics Dischargers gently and slowly discharge the battery down to the correct critical voltage and then switch off automatically. This level of discharge cannot effectively be reached by use in the camcorder, which will show the 'battery' indication when there is still enough life in the battery to unlace the tape and eject it.

Keene Electronics Pro series camcorder battery dischargers

Keene dischargers use a slope discharge method which slowly reduces the current drawn as the cut off point is approached, achieving the maximum benefit from the discharge.

Pro series dischargers are guaranteed to cut off at the critical voltage. What's more, they're covered by a 3 year replacement warranty. With slow charger, awarded 'Best Accessory 1994' by What Camcorder

To discharge battery types below	Order code	Price
Panasonic 4.8V NP10/BS10/BS10E etc	[KD48P]	£18.99
JVC/Panasonic 6V NP17/17H etc	[KD17P]	£18.99
Sony 6V older type NP22/22H etc	[KD22P]	£18.99
Sony 6V recent models NP55/66/66H/77/77H etc	[KD55P]	£18.99
Sharp 6V NP80/BT80	[KD55P]	£18.99
JVC/Panasonic 9.6V 6 lug fixing (NP27)	[KD96P]	£18.99
Canon BPE77K, BPE718, BPE722 (NP37/718 fit)	[KD37P]	£18.99

BULK PRICING (50+) and OEM AVAILABLE on these products

Chargers and dischargers for other batteries

PC70 charger

2 hour fast charger for 2 or 4 AA or AAA batteries. It can recharge either NiCD or NiMH and incorporates negative delta-v circuitry for reliable full-charge detection. It also features faulty battery detection, with temperature and short circuit protection. Negative delta V cut-off and trickle charge after full charge. Supplied complete with UK mains adaptor and also with a 12v cigar car cord. Excellent value.

Charger only [PC70]	£14.99

PC10

Recharges 2 or 4 AA or AAA NiCD or NiMH cells at a time. Built in IC timer control with automatic charge current selection and LED charge indicator.

Charger only [PC10]	£6.99

Charger complete with 4 x AA 2000mAh NiMH batteries

[PC1020]	£12.99

UC1

Reverse polarity protection. LED charge indicator. Charges 1 to 4 AA, AAA, C, D or PP3. Built in discharger and auto charge rate selection. Charge times AAA: 2 hrs (NiCd), 3–4 hrs (NiMH); AA: 7 hrs (NiCd), 14 hrs (NiMH); C/D: 14 hrs (NiCd), 24 hrs (NiMH); PP3: 12 hrs (NiCd), 12–16 hrs (NiMH).

Charger only [UC1]	£8.99

UC03

Recharges 2 – 8 AA or AAA cells at a time, either NiCd or NiMH. Microprocessor timer controlled with overcharge protection.

[UC03]	£13.99

Hahnel HSC104 Rapid Charger

New from Hahnel, a fast (and safe) charger for your NiMH AA & AAA batteries. A set of fully discharged 2000mAh batteries can be recharged in about 2 hours! It uses a progressive charge control which replaces the bulk of the charge quickly, then slows the rate of the charge for the all-important final stage. It's even fan cooled to ensure the cell temperature stays within range! It can be used worldwide (110V/240V) and can also be powered from a car cigarette lighter socket (cord included). Not only that, it comes complete with four of the latest 2350 mAh AA batteries, all together at an amazing price

[HSC104]	£34.99

RECHARGEABLE BATTERY MEGADEAL

This package makes an ideal kit; four batteries on charge whilst four are in use! You get eight AA 2300mAh NiMH rechargeable batteries plus a PC10 compact mains charger (see previous page). Our normal price for two packs of AA 2300mAh batteries on their own is £13.75. With this deal, you pay the same price and get the mains charger (normally £6.99) thrown in for FREE! With disposable AAs costing anything up to £3 a pack this is one deal that will pay for itself in no time. Limited stocks – first come first served!

Contents:

8 x 2300mAh NiMH AA batteries

PC10 charger (UK 3 pin style) IC controlled timer charge with auto current sensing for AA or AAA batteries Batteries are charged in pairs, two at the front, two at the rear with LED indication

Approx charge times: AAA 250mAh 2.5hrs; AAA 800mAh 8hrs; AA 1500mAh 6hrs; AA 2300mAh 10hrs

[AADEAL] £13.75

Hahnel PowerStation TC Smart

A compact plug in 3 - 4 hour fast charger for 2 x AA or 2 x AAA NiMH/Nicad batteries. This is a direct plug in charger, with no separate AC/DC adaptor needed. Electronic -dV charge control automatically switches off fast charge and the unit switches to a low current maintenance charge.

Available pre-packed (inset) with:

4 x AA NiMH batteries 2350 mAh [TCSAA] £19.99

4 x AAA NiMH batteries 900 mAh [TCSAAA] £19.99

Hahnel PowerStation Quattro

A new charger, capable of charging four 2300mAh AA batteries in just one hour!

The Powerstation Quattro works like four chargers within one housing. Each battery is individually charged to achieve maximum battery capacity. There are four thermo-sensors, one to protect each battery, plus an additional safety timer. The charge control system is software based; each battery is assessed before the fast charge begins. Defective or non-rechargeable batteries are rejected. When a battery is fully charged the sensitive –dV system will switch off the fast charge automatically. Once the fast charge is complete a control system switches to a low current maintenance charge to keep the battery at its maximum capacity. LEDs enable you to see at a glance what is happening to each battery. The unit even features a built in cooling fan to ensure that it's working temperature remains within acceptable limits. Supplied complete with worldwide universal mains adaptor, 12 volt car lead and four high performance AA 1.25 volt 2350 mAh NiMH batteries

[HPSQ] £39.99

The GIGABOX Ultimate battery charger

If you're looking for the last word in domestic battery chargers, here it is. Designed to discharge and recharge up to four NiMH or NiCD batteries, each battery is independently assessed and monitored during charge (and optional discharge). Every bank has individual delta-v full charge detect, short circuit protect and controlled pulse trickle charge mode. There's even a graphical display to inform you of the current state of each battery. Not cheap, but its certainly a nice bit of kit. Cell types: AAA, AA, C, D and one 9V block battery. Charging current: automatically set for each size of battery. — delta-V termination. Includes integrated timer and switches automatically to trickle charge to prevent overcharging. Charging time: from 1 hour depending upon capacity and condition of battery. Includes UK mains adaptor and also 12V cigarette plug adaptor.

Order Code [GB] £95.00

isun solar charger/powerpack system

The **isun** is a really neat portable solar charger ideal for use with small electronic devices. It is very compact, (roughly Filofax sized when folded) and the case design also features small rubber suckers so it can be stuck onto the window of a train. It is ideal as a top-up charger for use with cell phones, PDAs, handheld computers, digital cameras, GPS, MP3 players etc. In direct sunlight a single iSun can produce 2.2 watts of power and although that may not be enough to fully recharge a flat battery it will certainly do a great job of extending your talk time. It's also possible to connect 2 or more iSun units together for larger power outputs should you need it.

Specifications
Wattage: 2.2 watts
Peak Output: 290mA @ 7.6 volts; 145mA @ 15.2 volts
Approx. Watt-Hrs / Day *: 8.8 - 11
Approx. Amp Hrs / Day *: 1.2–1.5 (7.6V); 0.6–0.73 (15.2V)
Dimensions: 7.25" x 4.5" x 1.25" / 184mm x 114mm x 32mm
Weight: 0.68 lb / 311 g
Temperature Range: -40°F to 176°F / -40°C to 80°C
Warranty: 2 years

* Based on 4 to 5 hours of average daily peak sunlight hours.

The **BattPak** is both a quick-charger and power source all in one. It can charge between 1 and 10 AA or AAA batteries from either mains, car cigar or solar power and once charged these batteries can also be used to power other devices. It is supplied with a UK mains adaptor and car cigar lead and the case is engineered to clip directly on to the iSun Solar Charger to make a great solar charging package. For example, 4 x 700mAh AA batteries would recharge in approx 5 hours from the mains or car or about 7 hours* from the iSun (*approximately – obviously the brightest sunlight will give the best conditions). Please note also that you can't charge more that 6 batteries at a time when using the car cigar power option (not enough voltage headroom!).

Specifications
Works with all Ni-Cd and NiMH rechargeable AA and AAA batteries
Built-in LED charge indicators
Dimensions: 7.5" x 3" x 1.25" / 190mm x 75mm x 30mm
Weight: 0.4 lb / 181g
Temperature Range: –40°F to 176°F / –40°C to 80°C
Warranty: 2 years

iSUN kit comprising solar charger plus Battpak [ISCP] £69.99

Hahnel Universal Tester

An really easy to use battery tester for suitable for both rechargeable and non-rechargeable batteries. Quickly tells you if they need replacing or recharging. Suitable for AA, AAA, C, D & 9v PP3 type batteries.

[HUT] £7.99

Plug in fast charger for model/hobby packs (see page 10)

For 7.2V and 9.6V packs [HCP72] £9.99

Our telephone order hotline is **0870 990 9000**. Order any time – no answering machines, talk to real people 24 hours a day, 365 days a year

Keene Lead/acid battery chargers

Neat and effective low cost chargers for lead/acid battery packs. Provide a controlled constant voltage charge to safely and gently bring your pack up to maximum capacity. Feature LED indicator of 'power' and 'charging' status. The 12V model comes complete with cigarette lighter plug fitted (ready to connect to most 12V packs) whilst the 6V model (pictured) has bared wire connection for your own configuration.

6V model	[KLAC6]	£19.99
12V model	[KLAC12]	£24.99

BULK PRICING (50+) and OEM AVAILABLE on these products

Browse and buy on-line at **www.keene.co.uk** – our complete range including new products not listed in this catalogue, and the most up-to-date prices

General purpose dischargers

A range of 5 dischargers for discharging nicads. Can be used to discharge AA, C and D cells, flashgun packs, model cars etc.

General purpose dischargers are fitted with a standard 2.1mm DC socket. They are not polarity sensitive, so will function correctly whichever way connected. You can configure your own connecting lead, or buy one of ours. For example, to discharge AA type Nicads you will need 1 x 4.8V discharger [GP4.8] @ £18.99, 1 x 4AA cell holder [HOLDAA] @ £0.75 and one connecting lead [KLD101] @ £1.99.

To discharge 4.8V (4 cell) order code [GP4.8]	£18.99
To discharge 6V (5 cell) order code [GP6]	£18.99
To discharge 7.2V (6 cell) order code [GP7.2]	£18.99
To discharge 9.6V (8 cell) order code [GP96]	£18.99
To discharge 12V (10 cell) order code [GP12]	£18.99

BULK PRICING (50+) and OEM AVAILABLE on these products

Leads for connecting GP Dischargers

Battery holder (PP3 type snap-on) to 2.1mm DC plug [KLD101]	£1.99
2 x miniature crocodile clips to 2.1mm DC plug [KLD102]	£1.99

Holders for 4 cells

Plastic holders for 4 x AA, C or D cells.

For 4 x AA cells [HOLDAA]	£0.99
For 4 x C cells [HOLDC]	£0.99
For 4 x D cells [HOLDD]	£0.99

Camcorder Holiday Checklist

If you are taking your camcorder on holiday then its worth considering the following;

Batteries

Have you got enough batteries? Bear in mind that in general, Nicads perform well in warm climates, less so in colder ones. Don't leave your batteries (or camcorder for that matter) in direct sunlight or in a car on a sunny day if you can avoid it. If you are going somewhere colder, try to keep your batteries about your person to keep them warm (see our battery safeguard in the 'power' section for protection against damage). If you have purchased batteries for your holiday then remember that new batteries will perform better the third or fourth time they are used. If you can, is a very good idea to charge and discharge them a couple of times before you go, particularly if they have not been used for a while.

Charging

What is the mains voltage at the resort? Check the label on the base of your battery charger carefully. If it says 'input voltage 110-240V' then it can safely be used anywhere. If it says '220-240V only' then DO NOT attempt to use it on 110V; it will overheat and severe damage will occur. Most (but not all) of Europe is 220V and so any UK 240V charger should work satisfactorily. America and certain other destinations are 110V. Contrary to popular belief, a multi-voltage input charger (i.e.110-240V) will take the same amount of time to charge a battery whatever voltage it is supplied with.

Car power

If you take your car on holiday, or hire one upon arrival, it is well worth considering the convenience of a car charger. Car chargers will work whether the car engine is running or not, and consume next to no current when compared to a car batteries capacity. Car cords are another useful addition to the gadget bag. They enable you to run your camcorder continuously from your car battery. They consist of a cigar lighter plug with a lead to a battery shell which fits on the camcorder in the normal way. Instead of Nicad cells it contains a special power supply which converts the cars 12-14V DC output down to that which your camcorder requires. (Beware of unregulated car cords.)

All these chargers and dischargers seem a lot of equipment to lug around if your going on holiday or videoing a wedding etc..

You don't need to! If you pre-condition your batteries by discharging and charging them at least three times during the week before you need the camera, you don't need to take a discharger or slow charger with you – just use the original mains charger. The batteries are not going to deteriorate much over the next four or five charges especially if they are being used a lot. A nicad is rather like a muscle – the more you use it the stronger it becomes, the less you use it the weaker it gets.

Also, to answer a question we are often asked, most of the original chargers supplied with video cameras are rated from 110V to 240 V and as such can be used almost anywhere in the world. If in doubt it should say on the bottom.

Blank tape

Have you got enough tape? Tape can be bought at most resorts but it is likely to be much more expensive. Be careful – fraud is common, and the trademarks of most leading brands are often illegally reproduced on duff tape. Tape intended for different countries is usually based upon a different system to the UK PAL (eg NTSC, SECAM etc). It will work just the same, but the running times will be different from that stated on the box. The grade of tape you use DOES make a surprising difference. Don't entrust your memories of the holiday of a lifetime to a cheap rubbish tape. Never store or transport your tape without its protective sleeve, you risk damage to the tape surface and may transfer dirt and dust to your camcorder itself.

Carrying case

Have you got a comfortable and protective case that will accommodate both your camcorder and its accessories? Remember that you should usually carry your charger and batteries with your camcorder as hand luggage to keep airport security happy, but check this with your tour operator before departure.

Filters

To protect your lens then make sure that you have either a UV or skylight fitted. If you want the sea or the swimming pool to look like it does in the brochure then a polariser is a must. See our filter selection guide for more details.
A must on any holiday is a lens cleaning cloth and/or packet of wipes. Hot hands covered with sun tan oil don't half mess up filters and lenses!

Rain cover

Hopefully it won't rain on your holiday, but spray from the sea can have terrible effects on your camcorder. A rain cover offers good protection from this and takes up very little room in the gadget bag.

Security

For your peace of mind, it could be worth investing in a small portable alarm to safeguard your gadget bag when on the beach etc.

Tripod

If you have room, a lightweight tripod will come in very handy. Not only will it enable clear steady shots, but it also gives you an opportunity to put yourself in the picture!

Finally and most importantly, before you leave test all of your equipment. Include any new purchases and make sure that everything is working properly. It would be very frustrating to arrive at your destination and find that you were unable to charge your batteries!

Car power cords, car power accessories

Run your camcorder, charge your batteries from your car's cigarette lighter socket.

I'm not going to be near the mains, so how can I charge my batteries?
Slow and fast chargers that will charge batteries from a 12 volt (eg car) battery are available. Another means of running the camcorder is to use what's called a car cord, and dispense with batteries altogether. A car cord is usually in the form of a dummy battery with a wire to a car cigar lighter plug (and hence to the car battery). The dummy battery houses the electronics. If you buy a car cord, make sure that it is of the 'switch mode' type; some car cords contain just a few diodes, and will not produce a stable output.

Car power cord

Basically, a dummy battery which connects to the camcorder in the usual way which then has a cord to plug into a standard 12V car cigar lighter socket. The dummy battery contains a regulated switch mode voltage convertor to drop the cars 12–14V DC output down to that which the camcorder requires. Lead length 1.5m lead (optional extension lead available).

Camcorder/battery type	Code	Price
Panasonic 4.8V camcorders	[CA48]	£21.99
JVC/Panasonic 6V NP17/17H etc	[CA66]	£21.99
Sony 6V older type NP22/22H etc	[CA22]	£21.99
Sharp 3.6V NiCd and NiMH (BTN11, BTH11)	[CL12]	£21.99
Canon 6V BPE77K, BPE718, BPE722 (NP37/718)	[CA77]*	£21.99
Panasonic M7, M10, MS1/2 12V (VBH30 type)	[CA12]	£21.99
Panasonic MMS4/5, M40/50 (VBF2E type)	[CAMS4]	£21.99

Note that these car power adaptors will deliver enough current to run almost all the camcorders on the market. There are, however, a few very power hungry models, notably the Sony V5000, Sony V6000, Canon A1, Canon A2Hi and Canon EX1Hi, EX2Hi (*CA77 not suitable). For these particular models, a high current car cord must be used. If you're not sure, please call.

Audio cassette adaptor

A great accessory for any MP3 player, this gadget is a dummy cassette with a cable leading to a 3.5mm jack plug. All you have to do to enjoy internet music while you drive is to push the 'cassette' into the car cassette player, and plug the cable into the earphone socket of your MP3 player! Works with any standard audio cassette player.

[ACA] £12.99

Mains to 12V DC adaptor

Very simple and very useful, just plug this into a mains socket and you've got a 12V cigar power socket ready to use. Great for using in-car products when you don't particularly want to be in your car. Input 220/240v UK style mains, output 12V DC max current 800mA

(Note that 800mA at 12v is 9.6W and is fine for low current items like cellphone chargers but is not powerful enough to run items such as tyre inflators and portable refrigerators! Please check you product rating before use – if you're unsure give us a call)

[H12V] £12.99

New products are being added to our range all the time. Check out www.keene.co.uk for details

Multi Purpose car cord

Switchable output voltage and polarity provides 6, 9 or 12V at up to 1500mA. Complete with most common DC connectors including mini jacks suitable for personal CDs & Walkmans

[CA1500] £19.99

Car cords for Li-ion battery camcorders

Car power cords to suit some of the popular Lithium-ion battery camcorders.The cords each consist of a dummy battery (containing the voltage convertor/regulator) connected to a car 12V cigarette lighter plug by a 1.2m (approx) cable. Ideal for continuously powering a camcorder from the car battery or other 12V source.

Panasonic 7.2V VWVBD1E type fitting [CL1E] £29.99

Canon 7.2V BP914/927 type fitting [CL91] £29.99

Battery belt charger

Charge just about any Nicad battery belt from car cigarette lighter socket. Using switch mode constant current charging it will charge a belt of any voltage. Charge times from 14 hours for a 4Ah capacity belt to about 24 hours for a 7Ah belt. Input voltage 8–15V DC, output 3–15V DC @ 420mA. Input (car lighter socket to charger) lead included. Requires output lead (see below).

[CBC1] £34.99

Also available, models to charge 6V lead/acid belts/packs

[CBC16] £34.99

and 12V lead/acid belts/packs

[CBC112] £34.99

BULK PRICING (50+) and OEM AVAILABLE on this product

CBC1 series output leads

The CBC1 chargers have a 2.5mm DC socket for output. Users can configure their own lead for connecting charger to belt, or buy one of these:

2.5mm DC plug to 2.5mm plug (most current DSM belts)

[KLDC1] £5.99

2.5mm DC plug to cigar plug (older DSM belts and lead/acid packs)

[KLDC2] £6.99

2.5mm DC plug to 2.crocodile clips

[KLDC3] £7.99

DRINKS CAN POWER INVERTOR

A great new product, this converts car cigar 12V to 230V AC mains power. The unit is cleverly housed in a drinks can sized container so it will sit neatly into most cars drinks can holders. Rated at 100W it is ideal for running laptops, battery chargers, portable TVs etc. Nicely made and fantastic value for money.

Specifications:
Input voltage: 10–15V DC
Max load DC current 15 amps 12V
Stand by current 0.25 amps 12V
Output: voltage 230V AC; wave form modified sine wave; frequency 50Hz
Output power: Continuous 100 watt; Peak 150 watt
Efficiency 90%
Battery low shutdown approx 10 volts. Thermal shut down 60°
Overload protected? yes
Output short circuit protected
Battery polarity protected? yes by Fuse 15 amp 12V
Weight 0.5 kg

[DC100] £29.99

Power supplies, voltage & AC/DC convertors (continued)

Universal multi voltage mains adaptor

A universal high power stabilized electronic mains adaptor for digital cameras, camcorders and other electronic appliances. The interchangeable DC plugs included are for centre plus and polarity protection. Any setting of the output voltage selector switch is protected against unintentional change of voltage. A power on LED and 2 rubber grips for easy handling round off the high specification of a neat, compact and easy to carry power supply for worldwide use. Ideal for travel use,it comes complete with 5 different DC output adaptors plus a special DC adaptor plug for Sony digital cameras, and another for Sony digital camcorders. It has worldwide universal voltage input (90-260V AC) and provides output voltages selectable from: 2.4 (3), 3.6 (4.2), 5, 6, 6.5, 7 and 8.4V DC at max current 2500mA (2.4-5V) 1700mA (8.4V)

[HD2500] £26.99

Universal mains to low voltage DC power supply

From Fameart, a high current (2500mA) regulated power supply. A wide choice of seven different DC adaptor plugs (with reversible polarity) and selectable voltages make it very versatile. The use of switch mode technology makes it compact, lightweight and efficient and it can also cope with worldwide input voltages (100–240V AC) – just add an ordinary travel plug and take it with you wherever you go. Ideal for powering digital cameras, MP3 players, electronic games, Walkmans, pocket TVs etc. Voltages selectable: 3, 4.2, 5, 6, 6.5, 7 and 8.8V DC

[ADP20116] £15.99

Keene Camcorder Runner

Whilst there are plenty of affordable replacement battery chargers available, hardly any of them provide the facility to power the camcorder directly from the mains. The Keene Camcorder Runner solves that problem, providing a stable regulated voltage directly to a 'dummy' battery plate connector. Worldwide AC voltage input.

Sony 6V NP55/66/77 type [KR55]	£49.99
Canon 6V BPE77K type [KR37]	£49.99
JVC/Panasonic 6V NP17 type [KR17]	£49.99
Panasonic 4.8V NP10 type [KR10]	£49.99

BULK PRICING (50+) and OEM AVAILABLE on this product

Mains voltage convertors (to run UK equipment on USA (110V) mains)

For visitors from Britain to the US, these transformers allow UK (220-240V) equipment to be powered from US (and other) 110/120V outlets. Other countries using 110/120V include: Bahamas, Barbados, Bermuda, Belize, Canada, Columbia, Dominican Republic, Indonesia, Jamaica, Japan, South Korea, Liberia, Libya, Mexico, Nicaragua, Panama, Philippines, Taiwan, Venezuela.

100VA (approx 100 watt) version

[USUK100] £19.99

200VA (approx 200 watt) version

[USUK200] £34.99

300VA (approx 300 watt) version (pictured top right)

[USUK300] £44.99

Mains voltage convertors (to run USA equipment on UK (240V) mains)

Allows USA electrical equipment (110/120V supply required) to be powered from the UK (220/240V) mains. Simply plug in the wall step-down transformer. Ideal for radios, Hi-Fi systems and other small appliances (not exceeding 45VA load)

[USM45] £9.99

High current versions for use with TVs and other larger appliances. USM300 has twin US socket outlets

Up to 100VA (pic right)	[USM100]	£19.99
Up to 200VA	[USM200]	£29.99
Up to 300VA	[USM300]	£39.99

Up to 1000VA Provides 2 x 110V BS4343 IP44 socket outlets. 1 x BS4343 plug included.

[USM1000] £79.99

BS4343 plug to fit USM1000 [100VPL] £5.99

High power up to 2000VA (pic bottom right)

[USM2000] £195.00

High power up to 3000VA [USM3000] £275.00

How do I know which one I need?

One VA is approximately equal to one Watt, (assuming the load is purely resistive (which most AV gear is). You can calculate the power rating (in Watts or VA) of your equipment, and hence determine the rating of the voltage converter to use, by multiplying the current by the voltage. Here are some examples:

Electric shaver 0.05A x 120V = 6VA use [USM30]
Radios 0.1A x 120V = 12VA use [USM30]
CD player 0.15A x 120V = 18VA use [USM30]
Christmas tree lights 0.2A x 120V = 24VA use [USM30]
Games Console 0.35A x 120V = 36VA use [USM100]
Televisions vary (check rating) but typically [300VA] use [USM300]
Computer 5A x 120V = 600VA use [USM1000]

NB these are just examples, please always check the actual rating!

MAINS OUTLET FOR YOUR CAR!

An amazing gadget which plugs into your car or boat cigarette lighter (12V DC) power socket and provides a UK 3 pin 220-240V AC mains outlet. With a continuous power output of 120W (max 150W & surge 250W) it's ideal for use with laptops, camcorders, lights, shavers etc. It is fully fused with overload and short-circuit protection and features an audible warning when your car battery falls to 10.7V and an auto cut-off when the car battery falls to 10V. Great for touring, caravanning, boating etc. Specifications: Input Voltage 10-15V DC • Output voltage 220-240V AC Continuous power 120W, peak power 150W Efficiency 90% • No load current 250mA • Dimensions (excl cables) 125mm x 96mm x 35mm

Order code [CM140] £69.99

Since launching the CM140 we've been asked for higher power versions of the car to mains adaptors and are pleased to report that we've found some. As you'd expect they're somewhat larger but they do deliver a lot more power and even better the 300W version is actually cheaper! Please note that for low current applications, connection to the car can be via a cigar plug lead or via alligator clips direct to the battery (both leads supplied) but for anything higher than 150W the alligator clips only must be used.

Specifications	CM300 (pictured)	CM600
Input Voltage	10-15v DC	10-25v DC
Output voltage	220-240v AC	220-240v AC
Continuous power	300W (via alligator clips)	600W (via alligator clips)
Peak (surge) power	1000W	1500W
Efficiency	90%	90%
No load current	650mA	650mA
Dimensions	250 x 104 x 58mm	290 x 205 x 73mm
Weight	900g	2100g
[Order code] Price	[CM300] £69.99	[CM600] £99.99

Replacement mains transformers as supplied for use with Keene Electronics equipment

All are world-wide voltage (110V/240V) compatible mains/DC adaptors with output via 2.1mm DC plugs centre positive.

Output 13.8V 2.5A DC, used with the Multicharger

[KT4] £39.99

Output 12V 200mA DC, used with most SyncBlaster products. Input via UK 3-pin mains plug

[KT5] £5.99

As KT5, except input via 2-pin Euro mains plug

[KT5E] £5.99

Output 15V 250mA DC, used with the SDA. Input via UK 3-pin mains plug (appearance same as KT5/5E)

[KT6] £7.99

As KT6 except input via 2-pin Euro mains plug

[KT6E] £7.99

BULK PRICING (50+) and OEM AVAILABLE on these products

AC/DC Mains adaptors

A range of universal mains adaptors suitable for powering a wide range of products. All feature an LED power indicator, and are short-circuit protected

Model	Voltages	Max load	Type	Code	Price
ADP30	1.5 3 4.5 6 7.5 9 12	300mA	Unregulated	[ADP30]	£4.99
ADP30R	As above	300mA	Regulated	[ADP30R]	£7.99
ADP50R	As above	500mA	Regulated	[ADP50R]	£8.99
ADP80R	3 4.5 6 7.5 9 12	800mA	Regulated	[ADP80R]	£11.99
ADP125SM†	As above	1250mA	Regulated (switch mode)	[ADSM12]	£14.99
HD2000††	2.4 (3), 3.6 (4.2), 5, 6, 6.5, 7 and 8.4	1500mA	Regulated (switch mode worldwide)	[HD2000]	£26.99

† Ideal for use with digital still cameras. Models we've successfully tried it with include Kodak 265, DC215, DC290, Fuji MX1500, E700, MX1200, MX500, MX1700, MX2700, MX2900, Nikon 950, 800, 990, Ricoh 5000, 5300, RDC7, Olympus C2000, C2020, C920, 860v, 2500z, C960, C990, Minolta EX, Dimage 5, 2300, Epson PC700, Jenoptic JD12, Casio QV3000, 2000, 8000, JVC 9CX1.

†† Ideal for travel use, comes complete with interchangeable plugs for UK Europe and USA input voltage 110–240v. (All other adaptors listed are 220–240v input only.)

DC power plug set

A set of 15 DC plugs for use with power supplies with detachable power jacks. Plug sizes are 2.5mm, 3.5mm, 3.0x1.0mm, 5.0x2.1mm, 5.5x2.1mm, 5.0x2.5mm, 5.5x2.5mm, 3.5x1.35mm, 4.0x1.7mm, 4.75x1.75mm, 5.0x1.5mm, 5.5x2.8mm, 6.3x3.0mm, 7.0x1.0mm, and 2.35x0.75mm, all in plastic storage case.

These plugs can be used with the Keene DSP1 digital still camera power supply, but note that they are straight, not right angled entry.

[DCPSET] £6.99

Mains input-12V DC output via XLR

The Keene KT4XLR provides an easy means of powering professional camcorders directly from the mains. It is a lightweight switchmode design that can be used worldwide (110V-240V AC input) with the appropriate travel plug adaptor. Output is to a 4 pin XLR female via 2m cable.(Please note that the output is rated at 13.8V DC with max current is 2.5A so this supply is NOT suitable for powering lights)

[KT4XLR] £49.99

BULK PRICING (50+) and OEM AVAILABLE on this product

Keene Electronics DC HUB

The Keene DC HUB is a clever device that takes one single DC input and "shares" it between up to five outputs. This allows you to replace up to five mains adaptors with just the one, freeing off some valuable mains socket space and generally tidying up your system.

The input voltage can be anything between 5 and 18V DC and the output voltage will be approximately 1 volt less than the input. The available current will be shared between the outputs. In practice, if you'd got say four devices all of which use 12V DC at between 100 and 200mA (a very common specification for most gadgets and processors) then you could replace all of these with one mains adaptor rated at 13.8V DC 1000mA and one DC HUB

DC HUB including 4 x DCH21L and 1 x DCLM output cables

[DCHUB] £39.99

DC HUB as above plus Keene KT4 worldwide 110/240V AC – 13.8V 2500mA DC transformer.

[DCKT4] £64.99

Output cable 2.1mm DC plug to 2.1mm DC plug, 2m

[DCH21L] £0.99

Output cable 2.1mm DC plug to 6 different DC plugs (2.1, 2.5, 3.0, 4.0 x 1.7, 2.35 x 0.75, 4.8 x 1.7mm), 2m long

[DCH21M] £2.99

BULK PRICING (50+) and OEM AVAILABLE on these products

Car power cable accessories

Car cigarette lighter plug to socket extension lead. 12ft long, fused @ 3A. Allows use of car power cords etc at greater distance

[KLD32] £4.99

2 sturdy crocodile clips on a length of cable to car lighter socket type connector. Use when 12V power available, but no lighter socket, eg caravan, boat..

[KLD33] £3.99

Car cigarette lighter plug to 2.1mm DC jack plug. Power for your nicad charger

[KLD103] £2.49

12V Cigar plug two-into-one adaptor Two cigar lighter sockets to one cigar lighter plug. Allows two units to be run from one socket.

[KA130] £3.99

Why not fax your order through? **01332 830551**